the various multipaths relative to the first received multipath. The time delay operator could be expressed relative to a multipath other than the first received multipath, in which case the above expression would include channel coefficients with positive delay elements (e.g., $C_x z^{+4}, C_{x-1} z^{+3}$, and so on). In any case, the above expressions demonstrate that the multipath channel between any mobile terminal 16 and a transmit antenna 14 may be expressed as a polynomial in z, based on the channel coefficients and corresponding path delays associated with the multipaths involved. If the multipath delay spread is less than one symbol period, each received symbol in a received signal will depend only on the current symbol and the two adjacent symbols making each z-polynomial of order three. The multipath channel for the downlink direction (i.e., base station 12 to mobile terminal 16) is generally different than the uplink direction (e.g., mobile terminal 16 to base station 12).

Remarks

The amendments submitted with this preliminary amendment involve three main areas of correction. First, the changes to page 4 correct a minor typographical error. Next, the changes to page 6 correct a minor error to the C_{jk} polynomial. In particular, the final element in the polynomial in the first paragraph should read $C_{n-1}z^{-(n-1)}$, which follows the general pattern of the preceding elements.

The last area of correction involves Figure 1. Applicant submits redline corrections to Figure 1, as well as formal drawings that incorporate these changes. The correction to Figure 1 adds reference numeral 10 to correspond with the specification's use of reference numeral 10.

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attachment is captioned **"Version with Markings to Show Changes Made."**

Respectfully submitted,

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CERTIFICATE OF MAILING

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"Version with Markings to Show Changes Made"

Please replace the paragraph beginning on line 12 of page 4 with the following paragraph:

For purposes of explaining the present invention, the simple example of three base stations 12 receiving signals from three mobile terminals 16 is used. In this example, each one of the mobile terminals 16 transmits a signal to each base station 12. Each mobile terminal 16 transmits the same signal to all three base stations 12; however, the signals transmitted by different mobile terminals 16 are different. The transmitted signals combine at each base station 12; but, because the transmit signals are modulated with different spreading codes, each base station 12 is able to separate the signals received from different mobile terminals 16. To separate the signal received from a given mobile terminal 16 from signals received from other mobile terminals 16, the base station 12 correlates the combined signal from all three mobile terminals 16 with the spreading code of a selected mobile terminal 16 using a rake receiver 15. The output of the rake receiver 15 is the received signal for a particular code channel. Each base station 12 typically includes a plurality of rake receivers 15 so that the base station 12 can receive signals from all three mobile terminals 16 simultaneously using a different rake receiver 15, each of which is matched to a selected code channel. Thus, if mobile terminal 16A is transmitting on code channel A, the output of the rake receiver 15 matched to that code channel, denoted as rake receiver 15A, is the received signal from mobile terminal 16A. Similarly, rake receivers 15B matched to code channel B output a received signal from mobile terminal 16B, and rake receivers 15C matched to code channel C output a received signal from mobile terminal 16C. As will be explained in more detail below, the received signals output from the rake receivers 15A, 15B, and 15C include mutual interference [from] caused by the transmissions from the other mobile terminals 16, as well as intersymbol interference (ISI).

Please replace the paragraph beginning on line 1 of page 6 with the following paragraph:

The propagation channel between a given mobile terminal 16 and a given antenna 14 comprises a number of propagation paths. These multiple propagation paths, referred to as multipaths, each have characteristic attenuation, phase, and delay attributes, which may be expressed as a complex coefficient representing magnitude and phase, and a corresponding delay attribute. Thus, channel C_{jk} may be represented by the polynomial

$[C_0 + C_1 z^{-1} + C_2 z^{-2} + ... + C_{n-1} z^{n-1}]$ $C_0 + C_1 z^{-1} + C_2 Z^{-2} + ... + C_{n-1} Z^{-(n-1)}$, where C_n represents the channel coefficient associated with a single multipath and z^x is a delay operator that represents the unit delay of the various multipaths relative to the first received multipath. The time delay operator could be expressed relative to a multipath other than the first received multipath, in which case the above expression would include channel coefficients with positive delay elements (e.g., $C_x z^{+4}, C_{x-1} z^{+3}$, and so on). In any case, the above expressions demonstrate that the multipath channel between any mobile terminal 16 and a transmit antenna 14 may be expressed as a polynomial in z, based on the channel coefficients and corresponding path delays associated with the multipaths involved. If the multipath delay spread is less than one symbol period, each received symbol in a received signal will depend only on the current symbol and the two adjacent symbols making each z-polynomial of order three. The multipath channel for the downlink direction (i.e., base station 12 to mobile terminal 16) is generally different than the uplink direction (e.g., mobile terminal 16 to base station 12).

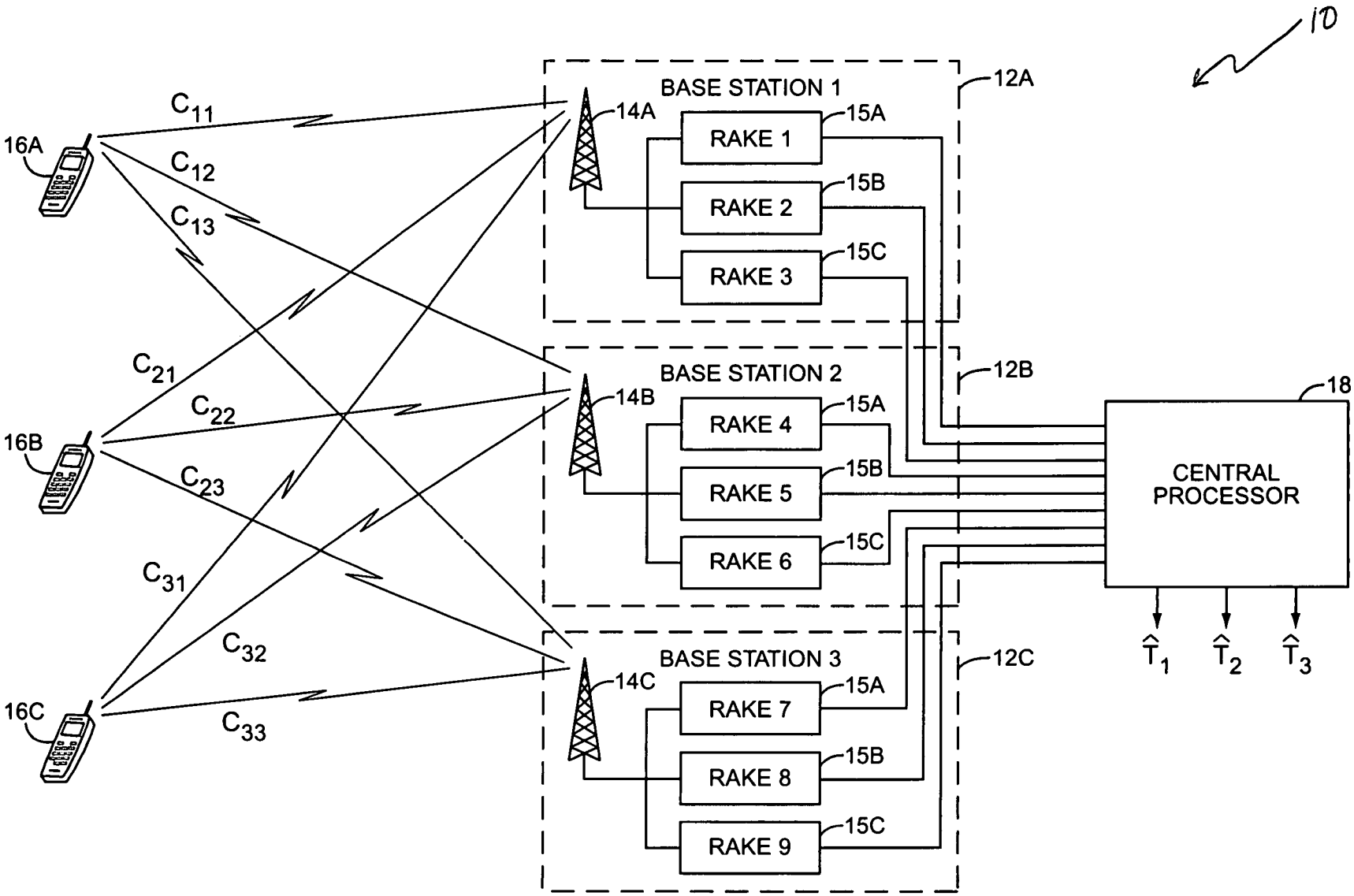

FIG. 1